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The analysis of digital ionograms taken in short time intervals show rapid changes of sporadic-E parameters. The lifetime (observation time) of an individual layer can be shorter than 1 minute. Frequently two or more Es-layers are observed in a given ionogram. Angle of arrival measurements show that the echoes are returned from two or more distinctly different areas in the sky implying a relatively small scale structure in horizontal directions. This conclusion is supported by the fact that almost 25% of the Es-layers found in our data set of more than 4,000 ionograms showed tilt angles of 20 degrees or more. The tilt angles were often highly variable. In many cases where continuity of the top frequency ftEs was observed over relatively long sequences of ionograms, the variation of the tilt angles still indicated some instability of the layer.

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ON THE VARIABILITY OF SPORADIC-E

The analysis of digital ionograms taken in short time intervals show rapid changes of sporadic-E parameters. The lifetime (observation time) of an individual layer can be shorter than 1 minute. Frequently two or more Es-layers are observed in a given ionogram. Angle of arrival measurements show that the echoes are returned from two or more distinctly different areas in the sky implying a relatively small scale structure in horizontal directions. This conclusion is supported by the fact that almost 25% of the Es-layers found in our data set of more than 4,000 ionograms showed tilt angles of 20 degrees or more. The tilt angles were often highly variable. In many cases where continuity of the top frequency f_{TEs} was observed over relatively long sequences of ionograms, the variation of the tilt angles still indicated some instability of the layer.



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